Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

CYA and ACL Units
MONSANTO COMPANY, LOUISIANA
Luling, St. Charles Parish, Louisiana
Agency Interest Number: 1096
Activity Number: PER20020007
Draft Permit 2533-V3

I. APPLICANT:

Company:
Monsanto Company
P.O. Box 174
Luling, Louisiana 70070

Facility:
CYA and ACL Units
Between LA Hwy 18 (River Road) and U.S. Hwy 90 in St, Charles Parish, Louisiana
Approximate UTM coordinates are 755.8 kilometers East and 3313.0 kilometers North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS:

Monsanto Company produces a variety of products at its Luling Plant. Manufacturing units include disodium iminodiacetate, glyphosate, phosphorus trichloride, cyanuric acid (CYA), and chlorinated cyanuric acid (ACL). The Luling Plant manufactured acetaminophen until the year 2004 when its production stopped.

Expansions of both the CYA and ACL Units are addressed in PSD-LA-623, issued February 27, 1998. Prevention of Significant Deterioration review was required for PM_{10} and CO emissions. Best Available Control Technology (BACT) requirements are outlined in Table 2 for the affected emission sources, and the PSD's specific conditions are incorporated into the Part 70 Specific Conditions.

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With respect to the CYA Unit, the CYA and ACL Units' initial Title V, Permit No. 2533-V0, granted April 24, 1998:

1. Increased production capacity from 90 to 140 million pounds per year by adding a new process train which included a pyrolysis kiln, offgas scrubber and concentrator, urea holding tank, and product storage silo;
2. Replaced the existing urea melting tank;
3. Added a new CYA purification process consisting of two hydrolyzers, a hydrator, a filtration system, and a wet cake railcar loading facility;
4. Added a dust collector to control dust from railcar loading;
5. Added a scrubber to control ammonia emissions from the new urea melting tank;
6. Added a scrubber to control ammonia emissions from the existing and new urea holding tanks when the kilns are down for maintenance; and
7. Added a new emergency ammonia scrubber to control the emergency feed diversion from the thermal oxidizer.

Subsequently, the equipment needs for the expansion project were better defined. With Permit No. 2533-V1, dated August 19, 1999, Monsanto removed several pieces of proposed equipment from the permit, including the new Urea Hold Tank (701) and the Urea Melting Tank (2-124). Additionally, PM_{10} emissions from the CYA Thermal Oxidizers No. 1 and 2 (7-82 and 32-96) were increased slightly; startup emissions form the CYA Kilns (15-72 and 3-97) and oxidizers were added as General Condition XVII Activities; Part 70 Specific Condition 4 (now 2) and State Only Specific Conditions 1 and 2 (now 2) were clarified to indicate that startup is not considered to be part of operation; and removed DRE testing for ammonia from the Urea Unloading Tank Scrubber and Urea Storage Tank Scrubber (2-97 and 20-97).

With respect to the ACL Unit, Permit No. 2533-V0:

1. Debottlenecked the existing facility to increase the production capacity from 45 to 60 million pound per year. The project involved upgrading the dissolving system, acidification system, chlorination system, drying system, and dry-end sizing and packaging system.
2. Replaced the dryer system, product receiver, and airvey system;
3. Added a new cooling tower and a new chilled water system;
4. Relocated and upgraded the chlorine railcar unloading station;
5. Added a new chlorine surge tank as part of the chlorine pipeline project; and
6. Relocated the caustic and sulfuric acid unloading spots.

With permit 2533-V1, Monsanto reduced chlorine emissions by routing the Steam Jet (3-96) to the ACL Chlorine Scrubber (1-72).

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With respect to Permit No. 2533-V2:

1. Debottlenecked one CYA purification train by adding a Hydrolyzer (Equipment No. 740), increasing the size of the Pure CYA Filter (Equipment No. 752), and making minor modifications to the conveying equipment. The Hydrolyzer (Emission Point 1-00) installed upstream of Hydrolyzer 743, thus, the capacity of the crude CYA increased from 140 to 180 million pounds per year;
2. Changed the maximum kiln urea feed rate from 34 to 38 gpm, as measured on an hourly average basis. Stack tested the CYA thermal oxidizers to demonstrate compliance with permitted limits prior to sustained operations under these conditions;
3. Transferred the requirement to maintain the water flow to the spray nozzles inside Hydrolizer 743 (9-97) at a minimum of 3 gpm during solid filling to Hydrolizer 740 (1-00). Added solids to Hydrolizer 740 instead of to Hydrolizer 743;
4. Removed the limit imposed on the thermal oxidizers' stack temperature;
5. Removed language requiring the submittal of a quarterly deviation summary report as this requirement is redundant to Part 70 General Condition R;
6. Removed State Only Specific Conditions 4 and 5 in Permit 2533-V2. Both conditions pertain to portions of the kiln offgas scrubber system. This equipment is not a pollution control device, but rather a product recovery system; and
7. Revised the maximum pounds per hour and tons per year of PM_{10} and CO emissions.

Several Part 70 permits addressing portions o the Monsanto, Luling facility have been issued. These include:

Permit No.	Units or Sources	Date Issued
2567-V3	Steam Plant and Supporting Units	7/12/2005
2596-V1	Phosphorus Trichloride	10/26/1999
2517-V5	Glyphosate Plant	2/11/2002
2574-V3	GI Plant	11/26/2001
2557-V0	DSIDA Unit	8/18/1998

There are currently four (4) Part 70 applications submitted to the Louisiana Department of Environmental Quality (LDEQ) undergoing the permit review process:

2596-V1	PCI 3 Unit	
2517-V6	Glyphosate Plant	
2574-V4	GI Plant	
2557-V1	DSIDA Unit	

III. PROPOSED PERMIT / PROJECT INFORMATION:

Proposed Permit

Monsanto Company submitted an application and Emission Inventory Questionnaire (EIQ) dated October 15, 2002, requesting a Part 70 Permit modification. Additional information dated May 17, 2006 and May 22, 2006 was also received.

A notice requesting public comment on the permit was published in the *Advocate*, Baton Rouge, Louisiana, on XXX XX, 2006 and *The St Charles Herald-Guide*, St. Charles, Louisiana, on XXX XX, 2006. The public notice was sent to persons included in the Office of Environmental Services Public Notice Mailing List on XXX XX, 2006. The proposed permit was also submitted to US EPA Region VI. All comments will be considered prior to the final permit decision.

Project description

The CYA and ACL Units are owned by Occidental Chemical Corporation and operated by Monsanto. The facility consists of three (3) main processes: crude CYA production (two trains), CYA purification (two trains), and ACL production (one train). For permitting purposes, one of the CYA purification trains is located in the CYA Unit, and one is located in the ACL Unit.

In the crude CYA process, a concentrated urea solution is fed to one of the two (2) kilns where it is pyrolyzed to crude CYA. Offgas from each kiln is scrubbed for product recovery and then sent to one of two thermal oxidizers (each oxidizer is dedicated to a particular kiln). The oxidizers destroy ammonia present in the offgas stream and generate steam from the waste's heat of combustion. This area also contains wet scrubbers to control ammonia from urea remelt tank, two urea hold tanks, and the diverted thermal oxidizer feed.

Next, crude CYA is either router to one to the two CYA purification trains or loaded into railcars for transportation to and offsite ACL facility. Particulate emissions from the railcar loading operation are controlled by a dust collector. The CYA remaining onsite is then purified via hydrolysis and hydration.

Once the CYA is purified, it reacts with caustic to prepare for chlorination. In the ACL Unit, CYA is chlorinated, neutralized, dewatered, dried, and packaged. Emissions from all chlorination equipment are controlled via caustic scrubbing, while particulate emissions from drying, product transfer, and packaging operations are controlled with dust collectors.

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This permit adds two (2) insignificant activities. These are Wastewater tank and a relief header and removes emission source 1-00, Hydrolizer 740.

Estimated emissions from the crude CYA Unit in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	4.46	4.17	–0.29
SO_2	1.16	1.17	+0.01
NO_x	81.56	81.56	–
CO	36.84	36.84	–
VOC	1.52	1.52	–

Estimated emissions from the ACL Unit in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	12.61	12.61	–
SO_2	0.02	0.02	–
NO_x	3.50	3.50	–
CO	6.57	6.57	–
VOC	0.18	0.18	–

Prevention of Significant Deterioration (PSD) Applicability and Non-attainment New Source Review (NNSR)

This application was reviewed for compliance with the Louisiana Preconstruction and Part 70 operating permit program. It was also reviewed for compliance with Louisiana Air Quality Regulations, NSPS, and NESHAP. Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) are not required.

MACT requirements

The CYA and ACL Units are subject to the maximum achievable control technology (MACT) standards of 40 CFR 63 Subpart FFFF and 40 CFR Subpart DDDDD. The requirements that are applicable to each source in the CYA and ACL Units are detailed in the regulatory applicability tables.

Air Modeling Analysis

Louisiana Toxic Air Pollutant (LTAP) dispersion modeling is performed for the applicable LTAP compounds with emissions above the Minimum Emission Rate. The

screening modeling results predict the maximum ground level concentrations of toxic air pollutants are below the Ambient Air Standards (AAS).

Impact on air quality from the emissions of the proposed units will be below the National Ambient Air Quality Standards (NAAQS) and the Louisiana Ambient Air Standards (AAS) beyond industrial property.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to Section VIII of the proposed permit.

Insignificant Activities

The insignificant activities associated with this permit are Section IX of the proposed permit.

IV. Regulatory Analysis

The applicability of the appropriate regulations is straightforward and provided in the Facility Specific Requirements Section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms conditions and standards are provided in the Facility Specific Requirements Section of the proposed permit.

Wetlands
This permit does not include any impacted wetlands.

V. Permit Shields

Not applicable.

VI. Periodic Monitoring

All periodic monitoring is conducted in accordance with state and federal regulations. See the Specific Requirements Section of the proposed permit renewal/modification for monitoring requirements.

VII. Applicability and Exemptions of Selected Subject Items

See Permit.

VIII. Streamlined Requirements

None

IX. Glossary

Best Available Control Technologies (BACT) - An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under this part which would be emitted from any proposed major stationary source or major modification which the administrative authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

Carbon Monoxide (CO) – A colorless, odorless gas which is an oxide of carbon.

Grandfathered Status- Those facilities that were under actual construction or operation as of June 19, 1969, the signature date of the original Clean Air Act. These facilities are not required to obtain a permit. Facilities that are subject to Part 70 (Title V) requirements lose grandfathered status and must apply for a permit.

Hydrogen Sulfide (H_2S) - A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the action of acids on metallic sulfides, and is an important chemical reagent.

Maximum Achievable Control Technology (MACT) - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

New Source Review (NSR) - A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_x) - Compounds whose molecules consists of nitrogen and oxygen.

Nonattainment New Source Review (NNSR) - A New Source Review permitting program for major sources in geographic areas that do not meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. Nonattainment NSR is designed to ensure that emissions associated with new or modified sources will be regulated with the goal of improving ambient air quality.

Organic Compound - Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: $\geq$ 10 tons per year of any toxic air pollutant; $\geq$ 25 tons of total toxic air pollutants; and $\geq$ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year of NO_x or VOC for sources in non-attainment parishes).

PM_{10}- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulfur.

Title V permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.